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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,398	03/26/2004	Thomas M. Meisel	ITDE-PNV118US	3288
23122	7590	08/28/2006	EXAMINER	
RATNERPRESTIA			LEE, PATRICK J	
P O BOX 980			ART UNIT	
VALLEY FORGE, PA 19482-0980			PAPER NUMBER	
			2878	

DATE MAILED: 08/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/811,398	MEISEL ET AL.	
	Examiner	Art Unit	
	Patrick J. Lee	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 14-21 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6-13 and 26-29 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, 5, 22, 23 and 25 is/are rejected.
- 7) ☒ Claim(s) 3 and 24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Group III – the species of conductive stripes in the reply filed on July 27, 2006 is acknowledged.

### ***Drawings***

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "62" has been used to designate both an end surface and the electron sensing device in figure 3a. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the examiner does not accept the changes, the

applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Label "94" in figures 5b and 5c is not described. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

#### ***Claim Objections***

5. Claims 1 & 22 are objected to because of the following informalities:

With respect to claims 1 & 22, the element of the claim starting with "the silicon die including a silicon step" should have a "wherein" disposed before it because that element does not add another new separate element, but rather explains the silicon die that was described in the step above.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-2, 4-5, 22-23, & 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,583,558 B1 to Suyama et al.

With respect to claim 1, Suyama et al disclose an electron tube CCD device comprising: base substrate (44) as a silicon die (see column 4, lines 55-65) including a CCD (20) as an active surface area for positioning below the surface of electron tube (10) as an electron gain device; and bonding pads (48, 49) as an array of first bonding pads formed on silicon step for providing output signals from the silicon die. Suyama et al disclose the electron-sensing device comprising CCD (20) to be positioned below the electron gain device (10) to form a relatively tight vertical clearance and illustrate in

figure 2 to form a step from CCD (20b). While Suyama et al the CCD (20) and base substrate to be separate, Suyama et al disclose both the CCD to be formed of silicon (see column 5, lines 38-40) and thus incorporating the CCD onto the substrate would have been obvious to one of ordinary skill in the art because such would allow for ease of manufacture of the device and reduce the number of steps and cost required to manufacture the device.

With respect to claim 2, the modified Suyama et al disclose stacked plates (40) made of ceramic as a ceramic carrier for holding the silicon die and second array of bond pads (49).

With respect to claim 4, the modified Suyama et al does not explicitly disclose the tight vertical clearance to be less than 100 microns, but such would have been obvious to one of ordinary skill in the art because such would allow for accurate detection of the light.

With respect to claim 5, the modified Suyama et al disclose the use of a CCD (20).

With respect to claim 22, Suyama et al disclose an electron tube CCD device comprising: base substrate (44) as a silicon die (see column 4, lines 55-65) including a CCD (20) as an active surface area for positioning below the surface of electron tube (10) as a second IC; and bonding pads (48, 49) as an array of first bonding pads formed on silicon step for providing output signals from the silicon die. Suyama et al disclose the electron-sensing device comprising CCD (20) to be positioned below the second IC (10) to form a relatively tight vertical clearance and illustrate in figure 2 to form a step

from CCD (20b). While Suyama et al the CCD (20) and base substrate to be separate, Suyama et al disclose both the CCD to be formed of silicon (see column 5, lines 38-40) and thus incorporating the CCD onto the substrate would have been obvious to one of ordinary skill in the art because such would allow for ease of manufacture of the device and reduce the number of steps and cost required to manufacture the device.

With respect to claim 23, the modified Suyama et al disclose stacked plates (40) made of ceramic as a ceramic carrier for holding the silicon die and second array of bond pads (49).

With respect to claim 25, the modified Suyama et al does not explicitly disclose the tight vertical clearance to be less than 100 microns, but such would have been obvious to one of ordinary skill in the art because such would allow for accurate detection of the light.

***Allowable Subject Matter***

9. Claims 6-13 & 26-29 are allowable over the prior art.
10. Claims 3 & 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
11. The following is a statement of reasons for the indication of allowable subject matter:

With respect to claims 3, 6, 24, & 26, US 6,583,558 B1 to Suyama et al does not disclose nor suggest the use of conductive stripes or flexible decals to extend between the array of terminals and bond pads. US 5,506,402 to Estrera et al disclose the use of

electrode (32) that would go down a step, but such is disposed on the electron gain device. As a result, it would not be obvious to modify the teachings of Suyama et al with those of Estrera et al. As a result, claims 3 & 24 are objected, while claims 6 & 26 and dependent claims 7-13 & 27-29 are allowable over the prior art.

### ***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 5,633,493 to Suzuki et al discloses an image tube device.

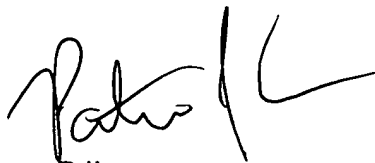
13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick J. Lee whose telephone number is (571) 272-2440. The examiner can normally be reached on Monday through Friday, 8:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 2878

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'Patrick J. Lee', with a stylized flourish at the end.

PJL

August 23, 2006

Patrick J. Lee  
Examiner  
Art Unit 2878